Turn That Down, Please

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Many people, both at home and at work, like to have the radio on for some background music or news. Your preferred sound volume, however, may well be annoying when a phone call has to be made or answered. This little circuit keeps music lovers and phone addicts happy at the same time by automatically reducing the music volume when the phone is taken off the hook. No need to walk over to the radio!

The circuit is simple and built from off the shelf components. As long as the receiver is on the hook, the phone line voltage will be high, causing the optocoupler to conduct and the relay to remain off. Via the relay contacts, the radio is then connected to the loudspeakers in the normal fashion.

Once the receiver is lifted, the situation reverses with R2 providing enough base current for T1 to start conducting. With the relay energized, the contacts connect 22-Ω resistors in series with the loudspeakers lines, causing much reduced volume and allowing you to complete the phone call without yelling.

Switch S1 when closed defeats the action of the optocoupler and so acts as a ‘bypass’ control.

The relay may be 12-volt type with two change-over (c/o) contacts or just two make contacts. Preset P1 is adjusted until the relay comes on reliably when the receiver is lifted.

Finally, of the two alternatives shown in the circuit diagram, only the CNY17-2 optocoupler will provide an isolation voltage specification compliant with Class 2 equipment. The 4N35 will still satisfy Class 1, however.

The circuit is conveniently and safely powered from a battery eliminator (a.k.a. mains adaptor) with a (loaded) output voltage of about 12 VDC.

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